

AMENDMENTS TO THE CLAIMS

1. (Previously presented) An apparatus comprising:
a reaction chamber forming a space in which a substrate is to be processed;
a gas supply pipe which is connected to said reaction chamber and which supplies processing gas for said substrate;
a gas exhaust pipe for exhausting an inside of said reaction chamber;
a gas reservoir for storing gas to be supplied to said reaction chamber;
a bypass line which bypasses said gas reservoir, said gas reservoir and said bypass line being juxtaposed to each other in a portion of said gas supply pipe; and
a control unit which allows the processing gas to be supplied to said reaction chamber by selecting one of said gas reservoir and said bypass line and using the selected one of said gas reservoir and said bypass line when said substrate is processed.

2. (Previously presented) An apparatus comprising:
a reaction chamber forming a space for holding a substrate to be processed;
a mass flow controller;
a gas supply pipe in fluid communication with said mass flow controller and said reaction chamber for carrying a processing gas from said mass flow controller to said reaction chamber;
at least one valve in said gas supply pipe;
a gas exhaust pipe for exhausting an inside of said reaction chamber;
a gas reservoir in fluid communication with said gas supply pipe for receiving said processing gas from said mass flow controller, storing said processing gas from said mass flow controller, and selectively releasing said processing gas to said reaction chamber;
a bypass line in fluid communication with a first point in said gas supply pipe between said mass flow controller and said gas reservoir and a second point in said gas supply pipe between said gas reservoir and said reaction chamber, said bypass line bypassing said gas reservoir; and
a control unit controlling said at least one valve to selectively open a first path from said mass flow controller to said gas reservoir, a second path from said gas reservoir to said reaction

chamber and a third path from said mass flow controller to said reaction chamber by way of said bypass line.

3. (Previously presented) The apparatus of claim 2 wherein said gas reservoir has an internal volume and said internal volume is filled with the processing gas.

4. (Previously presented) The apparatus of claim 2 wherein said at least one valve comprises a first valve between said first point and said gas reservoir, a second valve between said gas reservoir and said second point and a third valve in said bypass line.

5. (Previously presented) The apparatus of claim 2 having a first configuration wherein said mass flow controller is connected to said reaction chamber by way of said gas reservoir and not by way of said bypass line and a second configuration wherein said mass flow controller is connected to said reaction chamber by way of said bypass line and not by way of said gas reservoir.

6. (Previously presented) A method comprising the steps of;
providing a reaction chamber forming a space for holding a substrate to be processed;
providing a mass flow controller;
placing a gas supply pipe in fluid communication with the mass flow controller and the reaction chamber;
providing at least one valve in the gas supply pipe;
providing a gas exhaust pipe from the reaction chamber;
providing a gas reservoir in fluid communication with the gas supply pipe and the reaction chamber;
placing a bypass line in fluid communication with a first point in the gas supply pipe between the mass flow controller and the gas reservoir and a second point in the gas supply pipe between the gas reservoir and the reaction chamber, the bypass line bypassing the gas reservoir;
and

controlling the mass flow controller to provide a processing gas to the first point and controlling the at least one valve to selectively place the mass flow controller in fluid communication with the gas reservoir at a first time and to selectively place the mass flow controller in fluid communication with the reaction chamber by way of the bypass line at a second time.

7. (Previously presented) The method of claim 6 wherein said steps of controlling the mass flow controller to provide a processing gas to the first point and controlling the at least one valve to selectively place the mass flow controller in fluid communication with the gas reservoir comprises the steps of providing the processing gas to the gas reservoir and releasing the processing gas from the gas reservoir.

8. (Previously presented) The method of claim 7 wherein said step of providing a gas reservoir comprises the step of providing a gas reservoir having an internal volume and wherein said step of providing the processing gas to the gas reservoir comprises the step of filling the internal volume with the processing gas.

9. (New) An apparatus as claimed in claim 1, wherein
the apparatus alternately supplies at least a first gas and a second gas into the reaction chamber to form a desired film on the substrate, and
when the first gas is supplied, one of the gas reservoir and the bypass line is selected to supply the first gas therefrom and the second gas is supplied from a different supply pipe.

10. (New) An apparatus as claimed in claim 2, wherein
the first gas is supplied to the reaction chamber in a state in which the first gas is not excited with plasma, and the second gas is supplied to the reaction chamber in a state in which the second gas is excited with plasma.

11. (New) An apparatus as claimed in claim 2, wherein

when the first gas is supplied to the reaction chamber using the gas reservoir, valves are respectively controlled such that the first gas is stored in the gas reservoir while the second gas is supplied to the reaction chamber.

12. (New) An apparatus as claimed in claim 2, wherein
a pressure in the reaction chamber when the first gas is supplied to the reaction chamber is set higher than a pressure in the reaction chamber when the second gas is supplied to the reaction chamber.